CLAIMS

I claim:

1. A method, comprising:

applying a protective layer to a first side of a wafer, the protective layer covering connection structures on the wafer;

removing, after applying the protective layer, material from a second side of the wafer to thin the wafer;

separating the wafer into a plurality of chips; and

attaching at least one of the chips to a substrate by connecting the connection structures to the substrate, wherein at least a portion of the protective layer remains between the chip and the substrate after attachment.

2. The method of claim 1, wherein the protective layer comprises epoxy.

3. The method of claim 2, further comprising partially curing the epoxy after application of the protective layer and prior to removing material from the second side of the wafer.

4. The method of claim 1, wherein the connection structures comprise solder balls.

5. The method of claim 4, wherein attaching at least one of the chips to the substrate comprises applying heat to at least partially melt the solder balls to reflow solder the chip to the substrate.

6. The method of claim 5, wherein the protective layer comprises epoxy, further comprising partially curing the epoxy after application of the protective layer and prior to removing material from the second side of the wafer.

7. The method of claim 6, wherein applying heat to at least partially melt the solder balls also finishes curing the epoxy.

8. The method of claim 1, further comprising, at substantially the same time as separating the wafer into a plurality of chips, separating the protective layer to a plurality of sections, each of the sections remaining in contact with one of the plurality of chips.

9. A method, comprising:

applying a protective layer to a first side of a wafer comprising at least one integrated circuit die, the protective layer covering connection structures on the wafer adjacent to the at least one integrated circuit die;

removing, after applying the protective layer, material from a second side of the wafer to thin the wafer; and

separating, after removing material from the second side of the wafer, the at least one integrated circuit die from the wafer without first removing the protective layer.

10. The method of claim 9, wherein the protective layer comprises a protective film comprising epoxy.

11. The method of claim 9, further comprising, at substantially the same time as separating the at least one integrated circuit die from the wafer, separating the protective layer to a plurality of sections, one of the sections remaining in contact with the at least one integrated circuit die.

12. The method of claim 9, further comprising attaching the at least one integrated circuit die separated from the wafer to a substrate by connecting the connection structures to the substrate, wherein at least a portion of the protective layer remains between the at least one integrated circuit die and the substrate after attachment.

13. A method, comprising:

applying a protective layer to a first side of a wafer, the protective layer covering connection structures on the wafer;

separating the wafer into a plurality of chips; and

attaching at least one of the chips separated from the wafer to a substrate by connecting the connection structures to the substrate, wherein at least a portion of the protective layer remains between the chip and the substrate after attachment.

14. The method of claim 13, wherein the protective layer comprises epoxy.

15. The method of claim 13, wherein the connection structures comprise solder balls.

16. The method of claim 15, wherein attaching at least one of the chips to the substrate comprises applying heat to at least partially melt the solder balls to reflow solder the chip to the substrate.

17. The method of claim 16, further comprising removing, after applying the protective layer, material from a second side of the wafer to thin the wafer, wherein the protective layer comprises epoxy, further comprising partially curing the epoxy after application of the protective layer and prior to removing material from the second side of the wafer.

18. A method, comprising:

applying a protective layer comprising epoxy to a first side of a wafer, the wafer comprising at least one integrated circuit die at the first side of the wafer, to protect solder balls on the first side of the wafer adjacent to the at least one integrated circuit die;

partially curing the epoxy in the protective layer;

removing, after applying and partially curing the protective layer, material from a second side of the wafer;

separating the at least one integrated circuit die from the wafer;

positioning the separated integrated circuit die on a substrate; and

heating the at least one integrated circuit die and the protective layer to attach the at least one integrated circuit die to the substrate and to cure the protective layer.

19. The method of claim 18, further comprising coupling the substrate to a circuit board, wherein at least a portion of the protective layer remains between the integrated circuit die and the substrate after the substrate is coupled to the circuit board.

20. A device, comprising:

a die with a first side and a second side;

a substrate with a first side and a second side;

at least one connection structure connected to the first side of the die and to the first side of the substrate to couple the die to the substrate; and

a protective layer between the first side of the die and the first side of the substrate, the protective layer having been applied to the die prior to the die being singulated from a wafer comprising a plurality of dies.

21. The method of claim 20, the protective layer having been applied to the die prior to the wafer being thinned.

22. The device of claim 20, further comprising a printed circuit board coupled to the substrate and memory coupled to the printed circuit board.